principal aquifer is the shallow Biscayne aquifer, which is composed of highly permeable limestone that is due to extensive carbonate dissolution. The Biscayne aquifer, particularly in the Dade County area, is very vulnerable to contamination and is the sole source of drinking water for more than 3 million people in this part of Florida.

Another major aquifer in Florida is the sand and gravel aquifer that is a major source of ground water in the western part of the Florida panhandle. As the name implies, this aquifer is composed of mixed surficial sediments. It serves as a major water supply for Pensacola and associated industries near Pensacola and is vulnerable to contamination by many of these industries.

The southern third of Florida contains a series of unnamed surficial and intermediate aquifers that are a major source of ground water. These aquifers are composed of surficial sediments and underlying carbonate beds and interbedded sand, silts, and clays. These aquifers are important public supplies for some communities and are widely used for rural supplies. The surficial aquifers are highly vulnerable to contamination from agricultural activities and other sources, while the intermediate aquifers are less vulnerable to contamination from source activities. Locally, these aquifers may be subject to contamination from saline water intrusion and elevated natural concentrations of radon-226.

The most extensive and productive aquifer system in Florida is the Flori-dan aquifer, which extends across the entire state, southern Georgia, and adjoining small parts of Alabama and South Carolina. The Floridan aquifer consists of as much as 3500 feet of limestone and dolomite beds, which occur at or near the land surface in the western part of the peninsula. In other parts of the state this aquifer is buried to depths as much as 1500 feet below sea level, making it a confined aquifer. The Floridan aquifer serves as a public water supply for many large cities and communities such as Jacksonville, Orlando, St. Petersburg, and Tallahassee and is also used as a major source of irrigation in rural areas. Where the aquifer is at or near the surface, it is susceptible to contamination by agricultural activities, leaching from landfills, and other waste disposal activities. Contamination in surficial and intermediate aquifers by pesticides from agricultural applications in some parts of the state has received considerable attention recently. Non-potable confined parts of this aquifer are locally used for injection of industrial and municipal waste waters in some parts of the state (see Table 3.6).

Ground Water Quality Issues

Because of Florida's heavy dependence on ground water and the vulnerability of this resource to contamination from a variety of sources, there are a